REMARKS

Claims 1-37 are pending in this Application. New claims 38 and 39 have been added. Claims 1-37 are listed as rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. US 2004/0096672 A1 (Lukas et al.). However, later in the action, claim 37 is merely objected to. By this response, claims 1, 26, 31, and 32 have been amended. Claim 23 has been cancelled. The Examiner is respectfully requested to reconsider all rejections in light of the amendments and following remarks.

New claims 38-39 find support throughout the specification. No new matter has been introduced. The above amendments were made without prejudice to expedite prosecution. Applicants reserve the right to remove the Lukas reference.

All pending independent claims (1, 26, and 32) now recite "exposing the porous low-k dielectric material to a silanol capping agent." The referenced dielectric material is formed from a precursor film having a porogen and a structure former. As explained in the specification (page 9, line 31 to page 10, line 12, for example),

> during the porogen removal process hydroxyl groups (–OH) can form within the dielectric matrix. These polar groups can significantly increase the dielectric constant, k, of the film. When the substrate is exposed to ambient, the hydroxyl groups will interact with moisture and trap water in the dielectric matrix, further increasing k. A silanol capping process addresses this issue by replacing the hydroxyl groups with non-polar groups (*e.g.*, alkyl groups), thereby rendering the film hydrophobic and allowing it to maintain a low overall dielectric constant, even when exposed to ambient moisture. Note that the term "silanol capping" as used herein will refer broadly to any process that involves replacing or "protecting" hydroxyl groups within the film. Silanol capping agents can also tie up "dangling bonds," reactive unpaired valence electrons, which likewise have a strong affinity for water. In some cases, this silanol capping may be effective to further lower the dielectric constant of the porous dielectric material or protect the dielectric from degradation due to subsequent exposure to ambient conditions, and particularly contact with water. Various silanol capping agents can be used including, for example, disilazanes (e.g., hexamethyldisilazane (HMDS)), chlorosilanes, aldehydes, and combinations thereof.

The Lukas et al. application describes various post-exposure treatment steps for its porous film at paragraphs [0060] through [0072]. No mention of silanol capping or the problems of dangling bonds or uncapped hydroxyl groups appears in these paragraphs. Further, a complete keyword search of the Lukas et al. specification revealed that the terms "silanol," "capping," HMDS, "aldehyde," "chlorosilane," "silazane," and "dehydroxylation" do not appear. Thus, it is respectfully submitted, that the Lukas et al. reference fails to teach or reasonably suggest "exposing the porous low-k dielectric material to a silanol capping agent."

The Action references paragraph [0071] and its description of using "the porous low-k dielectric as an interlayer dielectric". It is difficult to discern how this fact pertains to silanol capping agents. Possibly the adjacent layers are viewed as "capping" (in a gross sense) the interlayer dielectric. As should be apparent from the above discussion, this is not what is meant as a silanol capping.

Regarding the rejection of claim 24, the Examiner states that Lukas discloses use of hexamethyldisilazane "which has been miss-spelled hexanethydisilizane." A word search of the Lukas et al. application failed to uncover either term. Various other search permutations were also tried.

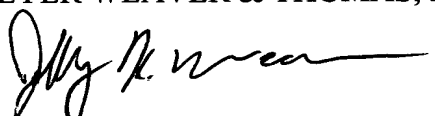
It is, therefore, respectfully submitted for at least the reasons stated above that independent claims 1, 26 and 32 are novel and patentable over Lukas et al. and withdrawal of the art rejections for these claims is respectfully requested.

Each of claims 2-22, 24, 25, 27-31, and 33-39 depend from one of claims 1, 26 or 32. Therefore, these claims are patentable over the cited prior art for at least the reasons stated above for claims 1, 26 and 32. Withdrawal of the art rejections for these claims is respectfully requested. Withdrawal of all rejections under 35 U.S.C. 102 is respectfully requested.

Conclusion:

In light of the foregoing amendments and remarks, Applicants respectfully submit that all pending claims are now in condition for allowance. Thus, Applicants respectfully request a Notice of Allowance from the Examiner. Should any unresolved issues remain, the Examiner is encouraged to contact the undersigned at the telephone number provided below. No fees appear to be necessary for this Amendment. However, if the Commissioner determines that any fee is due, such fee may be charged to deposit account No. 50-0388 (Order No. NOVLP075).

Respectfully submitted,
BEYER WEAVER & THOMAS, LLP



Jeffrey K. Weaver
Registration No. 31,314

P.O. Box 70250
Oakland, CA 94612
Telephone (510) 663-1100